

REMARKS

Claims 15 to 21 remain in the present application. No claims have been amended by this response.

Reconsideration of the Examiner's decisions and reexamination of this application are respectfully requested. Entry of this Response Pursuant to 37 CFR §1.116 is respectfully requested as no claims are amended.

Examiner interview:

The Examiner's courtesy in granting an interview with the undersigned on July 19, 2005, is acknowledged. During the interview, the rejections of claims 15 and 17 were discussed. Applicants presented arguments for the patentability of claims 15 and 17 but did not result in the allowance of any of the claims.

The §103 rejections:

Claims 15 to 21 have been rejected by the Examiner under 35 USC §103(a) as being unpatentable over US Patent 5,821,762 to Hamaguchi et al U.S. Patent 5,821,762 (hereafter "Hamaguchi") in view of Prasad et al U.S. Patent 6,281,452 (hereafter "Prasad").

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Hamaguchi in Figure 1 shows the structure of a thin film 1b and a ceramic carrier 1a joined to another ceramic carrier 2. Figure 3 of Hamaguchi shows partial removal of the ceramic carrier 1a. Figure 6 of Hamaguchi illustrates a step in the assembly of the thin film 1b having chips 3 to ceramic carrier 2. Figures 14 to 16 illustrate embodiments in which a thin film 1A has chips joined to both sides of a thin film. Prasad illustrates the removal of a sacrificial carrier.

The last three steps of Applicants' claim 15 are (paraphrasing): attaching a semiconductor device to the first surface of the thin film structure, removing the temporary carrier (which was previously joined to the thin film structure) and then attaching a semiconductor device to the second surface of the thin film structure which the first and second surfaces are opposed.

Prasad merely illustrates the removal of a sacrificial carrier. The Figures 14 to 16 of Hamaguchi are closest to Applicants' invention but these Figures of Hamaguchi illustrate only the structure of the article, not how it is made. Applicants could find no description in Hamaguchi on how the thin film 1A is formed with respect to the chips joined to either side of the thin film.

Applicants claim 15 claims the method of forming the article. As such, there is no teaching in Hamaguchi or Prasad on the method of attaching a semiconductor device to the first surface of the thin film structure, removing the temporary carrier and then attaching a semiconductor device to the second surface of the thin film structure. Accordingly, the combination of Hamaguchi and Prasad cannot render obvious Applicants' claim 15.

Inasmuch as claims 16 to 21 depend, directly or indirectly, from claim 15, and since claim

15 is believed to be allowable, then claims 16 to 21 should be allowable as well.

In addition, claim 17 is believed to be independently allowable as well. Claim 17 recites the step of "applying a stiffening material only between the frame and one of the....semiconductor devices". [emphasis added]. This results in the structure shown in Figures 1 to 3 of Applicants' application where the stiffening material is only between the chip and the frame but not otherwise present between two chips or between the chips and the thin film. Hamaguchi, on the other hand, shows the stiffening material everywhere, i.e, between the chips and the thin film and between the frame and two chips (center part of the frame). Prasad is irrelevant to this claim. Thus, there is no combination of Hamaguchi and Prasad that can render obvious Applicants' claim 17.

Summary:

In view of all of the preceding remarks, it is submitted that all of claims 15 to 21 are in condition for allowance. If the Examiner finds this application deficient in any respect, the Examiner is invited to telephone the undersigned at the Examiner's earliest convenience to resolve such deficiency.

Respectfully submitted,
Ajay P. Giri, et al.

By:



Ira D. Blecker, Attorney
Registration No. 29,894
Telephone: (845) 894-2580